CLAIMS

Amend the claims as follows.

1-5. (Cancelled)

6. (Currently amended) A circuit, comprising: ~~The circuit according to claim 5,~~

a plurality of sampling-amplified-offset devices configured to sample, amplify, and/or compensate levels of an R charge signal, a G charge signal, and a B charge signal, respectively, and obtain an R analog signal, a G analog signal, and a B analog signal;

a gain adder configured to multiply at least one of the R, G, or B analog signals by a corresponding weighted value, wherein the gain adder is further configured to add at least a subset of the analog signals that are multiplied by the weighted values to obtain a summer analog signal; and

a multiplexer configured to select at least one of the R analog signal, the G analog signal, the B analog signal, or the summer analog signal as an output signal;

wherein at least one ~~one or more~~ of the sampling-amplified-offset devices includes ~~further comprises~~:

a ~~correlation double~~ sampler[[,]] configured to obtain a plurality of samples on at least one ~~one or more~~ of the R, G, or B charge signals ~~signal~~ and to determine a luminance based, at least in part, on a difference between at least two of the ~~said~~ samples;

a programmable gain amplifier configured to obtain an amplified luminance according to a gain value; and

an offset device[[,]] configured to compensate at least one of ~~obtain~~ the R, G, or B analog signals ~~of the one or more of the R, G and B charge signals~~, respectively, based, at least in part, on the obtained amplified luminance.

7. (Currently amended) A circuit, comprising: ~~The circuit according to claim 5,~~

a plurality of sampling-amplified-offset devices configured to sample, amplify, and/or compensate levels of an R charge signal, a G charge signal, and a B charge signal, respectively, and obtain an R analog signal, a G analog signal, and a B analog signal;

a gain adder configured to multiply at least one of the R, G, or B analog signals by a corresponding weighted value, wherein the gain adder is further configured to add at least a subset of the analog signals that are multiplied by the weighted values to obtain a summer analog signal; and

a multiplexer configured to select at least one of the R analog signal, the G analog signal, the B analog signal, or the summer analog signal as an output signal;

wherein at least one ~~one or more~~ of the sampling-amplified-offset devices includes ~~further comprises~~:

a ~~correlation double~~ sampler[[,]] configured to obtain a plurality of samples of at least one ~~one or more~~ of the R, G_x or B charge signals and to obtain a luminance;

an offset device[[,]] configured to compensate a level of the luminance to obtain a compensated luminance; and

a programmable gain amplifier[[,]] configured to adjust ~~adjusted~~ a gain value to amplify the compensated luminance and to obtain at least one ~~one or more~~ of the R, G_x or B analog signals ~~of the one or more R, G or B charge signal, respectively~~.

8. (Currently amended) The circuit of ~~according to~~ claim 6 [[5]], wherein the gain adder comprises ~~further includes~~:

a plurality of gain amplifiers[[,]] configured to multiply at least one ~~the one or more~~ of the R analog signal, the G analog signal, or the B analog signal by the corresponding weighted gains to obtain a plurality of weighted analog signals; and

an adder[[,]] configured to add the weighted analog signals to obtain the summer ~~addition~~ analog signal.

9. (Currently amended) The circuit of ~~according to~~ claim 6 [[5]], wherein the multiplexer is further configured to select ~~selects~~ at least one ~~one or more~~ of the R, G_x or B analog signals and output ~~outputs~~ a selected one to an analog-digital converter.

10. (Cancelled)

11. (Currently amended) A circuit, comprising: ~~The circuit according to claim 10,~~

a plurality of sampling-amplified-offset devices configured to sample, amplify, and compensate levels of an R charge signal, a G charge signal, and a B charge signal, respectively, and obtain an R analog signal, a G analog signal, and a B analog signal;

a plurality of gain adders configured to multiply the R, G, and B analog signals by different weighted values to obtain a plurality of results, wherein the plurality of gain adders are further configured to add at least a subset of the results into a summer analog signal; and

a multiplexer configured to select the R analog signal, the G analog signal, the B analog signal, or the summer analog signal as an output;

wherein at least one ~~one or more~~ of the sampling-amplified-offset devices includes ~~further comprises~~:

a ~~correlation double~~ sampler[[,]] configured ~~adapted~~ to perform sampling at least twice on the R, G, or B charge signals[[,]] and to perform a subtraction operation on sampling results ~~of the two samplings~~ to obtain a luminance;

a programmable gain amplifier[[,]] configured ~~adapted~~ to adjust a gain value to amplify the luminance and to obtain an amplified luminance according to the gain value; and

an offset device[[,]] configured ~~adapted~~ to compensate ~~level of~~ the amplified luminance to obtain the R, G, or B analog signal ~~of the R, G and B charge signal, respectively~~.

12. (Currently amended) A circuit, comprising: ~~The circuit according to claim 10,~~

a plurality of sampling-amplified-offset devices configured to sample, amplify, and compensate levels of an R charge signal, a G charge signal, and a B charge signal, respectively, and obtain an R analog signal, a G analog signal, and a B analog signal;

a plurality of gain adders configured to multiply the R, G, and B analog signals by different weighted values to obtain a plurality of results, wherein the plurality of gain adders are further configured to add at least a subset of the results into a summer analog signal; and

a multiplexer configured to select the R analog signal, the G analog signal, the B analog signal, or the summer analog signal as an output;

wherein at least one ~~one or more~~ of the sampling-amplified-offset devices includes ~~further comprises~~:

a ~~correlation double~~ sampler[[,]] configured ~~adapted~~ to perform sampling at least twice on the R, G_x or B charge signal and to perform a subtraction operation on sampling results ~~of the two samplings~~ to obtain a luminance;

an offset device[[,]] configured ~~adapted~~ to compensate a level of the luminance to obtain a compensated luminance; and

a programmable gain amplifier[[,]] configured ~~adapted~~ to adjust a gain value to amplify the compensated luminance[[,]] and to obtain the R, G_x or B analog signal ~~of the R, G and B charge signal, respectively~~.

13. (Currently amended) The circuit of ~~according to~~ claim 11 [[10]], wherein at least one ~~one or more~~ of the gain adders comprises ~~further includes~~:

a plurality of gain amplifiers[[,]] configured ~~adapted~~ to multiply the R analog signal, the G analog signal, and the B analog signal by the corresponding weighted gains to obtain a plurality of weighted analog signals; and

an adder[[,]] configured ~~adapted~~ to add the weighted analog signals to obtain the summer ~~addition~~ analog signal.

14. (Currently amended) The circuit of ~~according to~~ claim 11 [[10]], wherein the multiplexer is further configured to select at least one of ~~selects~~ the R, G_x or B analog signals and output ~~outputs~~ a selected one to an analog-digital converter[[,]] to form a digital signal.

15-17. (Cancelled)

18. (New) The circuit of claim 7, wherein the gain adder comprises:

a plurality of gain amplifiers configured to multiply at least one of the R analog signal, the G analog signal, or the B analog signal by the corresponding weighted gains to obtain a plurality of weighted analog signals; and

an adder configured to add the weighted analog signals to obtain the summer analog signal.

19. (New) The circuit of claim 7, wherein the multiplexer is further configured to select at least one of the R, G, or B analog signals and output a selected one to an analog-digital converter.

21. (New) The circuit of claim 12, wherein one or more of the gain adders comprises:

a plurality of gain amplifiers configured to multiply the R analog signal, the G analog signal, and the B analog signal by the corresponding weighted gains to obtain a plurality of weighted analog signals; and

an adder configured to add the weighted analog signals to obtain the summer analog signal.

22. (New) The circuit of claim 12, wherein the multiplexer is further configured to select at least one of the R, G, or B analog signals and output a selected one to an analog-digital converter to form a digital signal.